

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-013937**Date Inspected:** 04-May-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1500**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** Bernard Docena, Steve McConnell, CWI Present**Yes** **No****Inspected CWI report:** **Yes** **No** **N/A****Rod Oven in Use:** **Yes** **No** **N/A****Electrode to specification:** **Yes** **No** **N/A****Weld Procedures Followed:** **Yes** **No** **N/A****Qualified Welders:** **Yes** **No** **N/A****Verified Joint Fit-up:** **Yes** **No** **N/A****Approved Drawings:** **Yes** **No** **N/A****Approved WPS:** **Yes** **No** **N/A****Delayed / Cancelled:** **Yes** **No** **N/A****Bridge No:** 34-0006**Component:** SAS OBG 1W/2W-C, 3W/4W-A, 4E/5E**Summary of Items Observed:**

The Quality Assurance (QA) Inspector, Rick Bettencourt was on site at the job site between the times noted above. The QA Inspector was on site to randomly observe the in process welding and inspection of the weld joints identified as 1W/2W- E, 1W/2W-D/S and 4E/5E and the following observations were made:

1W/2W-E1

The QA Inspector randomly observed the ABF welders had previously started the induction heating blankets to ensure the minimum required preheat of 150°F was achieved prior to welding. The QA Inspector randomly verified utilizing a 150°F temperature indicating marker and noted the minimum required preheat had been achieved. The QA Inspector noted the splice plates were removed in weld segment E1 to allow the FCAW machine to travel the full length of the weld joint. The QA Inspector observed the ABF welder to be utilizing a semi automated FCAW track system for welding the above identified weld joint. The QA Inspector randomly observed the SE QC Inspector identified as Bernard Docena set the FCAW machine to the parameters of the approved WPS. The QA Inspector randomly observed the FCAW parameters were 254 Amps, 23.2 Volts and a travel speed of 239mm/min. The QA Inspector randomly observed the ABF welder Song Toa Huang begin the FCAW fill pass, once the semi automated track system reached a certain point the ABF welder Huang Jin Quan would observe the welding arc for the remainder of the weld. The QA Inspector noted the ABF welders did complete the majority of weld segment E1 on the QA Inspectors shift. The QA Inspector noted a small portion approximately 600mm at the top of weld segment C1 will need to be completed manually due to the access of the semi automated track system. The QA Inspector noted the bug-o track system does not travel the full length of the weld joint. The remainder of the weld joint will need to be completed manually.

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4E/5E

Upon the arrival of the QA Inspector, it was observed the American Bridge/Fluor (ABF) erection crew had began pushing the OBG lift 5E to the final resting position. The QA Inspector randomly observed all of the paint had been removed by grinding in the areas where welding will be performed. The QA Inspector noted no access was granted to the bottom side of the top deck plate due to the erection process and the ladders had been removed to allow lift 5E to be set in place. The QA Inspector randomly observed the ABF welding personnel had performed some grinding tasks of the transition welds on the top deck plate "A" on the 4E side of the weld joint. The QA Inspector noted the grinding was performed from the top side of the top deck plate, with the ABF welder grinding while reaching over and upside down. The QA Inspector noted no access was in place during the QA Inspectors shift. The QA Inspector reached over and examined the transition which was ground. The QA Inspector noted the transition area appeared to be blended but the QA Inspector was unable to accurately performed visual testing to determine the extent of the grinding until access is granted to the under side of the joint. The QA Inspector noted no grinding had been completed on the 5E side of the weld joint on the QA Inspectors shift. The QA Inspector noted the OBG 5E was still approximately 25 feet from 4E at the end of the QA Inspectors shift.

1W/2W-D/S

D/S-17 and 18

The QA Inspector was informed by the SE QC Inspector Bernard Docena the procedure for welding the longitudinal stiffeners had been changed by the WQCM Jim Bowers. As previously noted by the QA Inspect the contractor is utilizing round bar stock to complete the weld joint restoration and removing the round bar stock prior to production welding or prior to the root opening being bridged. The QC Inspector informed the QA Inspector due to the contractors inability to remove the round bar stock without re-opening the root to opening to an out of tolerance dimension, an amended method of the welding procedure will be performed. The QC Inspector informed the QA Inspector once the weld joint is restored by welding, the weld joint will be welded from one side with the round bar stock in place. The QC Inspector went on to inform the QA Inspector the once the welding is completed from one side, the round bar stock will be removed and back gouged to sound metal and back welded from the opposite side of the weld joint from which the round bar stock was removed.

The QA Inspector randomly observed the ABF welder James Zhen performing shielded metal arc welding (SMAW) root/fill passes at the above identified stiffener plates (pictured below). The QA Inspector noted the ABF welder was utilizing 5/32" E7018 low hydrogen electrodes with 135 Amps. The QA Inspector noted the SMAW parameters appeared to be in general compliance with ABF-WPS-D1.5-1010. The SMAW was in process for the remainder of the QA Inspectors shift.

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Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916)-813-3677, who represents the Office of Structural Materials for your project.

Inspected By: Bettencourt,Rick

Quality Assurance Inspector

Reviewed By: Levell,Bill

QA Reviewer